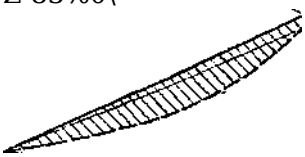
example ; taking into consideration the quantities of slag for the intermediate stages,1 it shows that oxygen was transferred from the flame gases which, calculated from commencement of charging to end of melting down period, amounted to 2*61 per cent, for changes wrought in the steel and to 0*22 per cent, for the production of PeO in the slag, i.e., to a total of 2-83 per cent. 0, whilst for the entire heat 2'86 per cent, was required for the metal and 0*22 per cent, for the slag, or a total of 3*11 per cent. The figures yield the following diagram.

Z-83%0\



Z-61
'•2-83%0 faQ
Z77 Minutes.
FIG. 12.

From this one sees that oxidising action of the flame during the fusion period is more powerful than on already fused metal. An example of the action of the flame on molten metal containing large amounts of reducing agents is given from the same source (p. 1339).

CHARGE 840.—Charge 19,705 kilogrammes molten pig-iron, heated without additions in the furnace.

Time	Minutes	Metal.				Slag.					
Test "bait en.	start.	C.	Si.	P.	Mn.	Fe.	FeO.	Mn.	PaOc.	Si02-	
12-35) 12-o3|	Charged	4' 44	1-10	0-15	2-03	—	—	—	—	—	(Pig-iron from both | ladles.
l-o		—	0-65	0-15	2-10	6-04	7-76	8-20	0-87	30-95	Bath quiet. Light slag covering.
1-20		—	0-65	0-15	2-20	2-49	3-20	4-26	0-43	38-18	Reaction moderate.
1-40		—	0-65	0-15	2-24	1-66	2-13	2-61	0-23	39-34	Bath warm.
2-O		—	0-63	0-13	2-34	1-54	1-98	1-81	o-ii	39-76	?j »
2*20	105	3-87	0-56	0-14	2-38	1-19	1-53	1*46	0-04	38-60	„ hot.

1 Herein the using up of furnace structure has been taken correspondingly to the " charged.me " as an addition of silica of 1-2 kilogramme per minute.